and A. Pastuszko



CONTENTS OF VOLUME 132

Vol. 132A No. 1

Special Issue: The 28th annual meeting of the International Society of Oxygen Transport to Tissue, Nijmegen, The Netherlands, August 20–25, 2000

Symposium papers S.B. Mohamad, H. Nagasawa, Y. Uto and H. Hori Tumor cell alpha-N-acetylgalactosaminidase activity and its involvement in GcMAFrelated macrophage activation Effect of the source and detector configuration on the detectability of breast cancer A.L. Honar and K.A. Kang I. Ding, W. Liu, J. Sun, B. Fenton and P. Okunieff 17 Comparison and modulation of angiogenic responses by FGFs, VEGF and SCF in murine and human fibrosarcomas T. Binzoni, L. Ngo, E. Hiltbrand, R. Springett 27 Non-standard O2 consumption-temperature curves during rest and isometric exercise in and D. Delpy H. Nagasawa, M. Yamashita, N. Mikamo, Design, synthesis and biological activities of antiangiogenic hypoxic cytotoxin, M. Shimamura, S. Oka, Y. Uto and H. Hori triazine-N-oxide derivatives Y. Uto, A. Hirata, M. Ishibashi, H. Nagasawa 41 Design and synthesis of 2,6-diprenyl-4-iodophenol TX-1952 with a novel and potent and H. Hori anti-peroxidative activity D.-Y. Yu and S.J. Cringle 47 Outer retinal anoxia during dark adaptation is not a general property of mammalian retinas K.G. Lyabakh and I.N. Mankovskaya 53 Oxygen transport to skeletal muscle working at VO₂max in acute hypoxia: theoretical predictions A multi-layer model of retinal oxygen supply and consumption helps explain the muted S.J. Cringle and D.-Y. Yu 61 rise in inner retinal Po2 during systemic hyperoxia Differences in oxygen re-saturation of thigh and calf muscles after two treadmill stress V. Quaresima, T. Komiyama and M. Ferrari 67 H. Baumgärtl, W. Zimelka and D.W. Lübbers Evaluation of Po2 profiles to describe the oxygen pressure field within the tissue G. De Visscher, K. van Rossem, J. Van Reempts, Cerebral blood flow assessment with indocyanine green bolus transit detection by M. Borgers, W. Flameng and R.S. Reneman near-infrared spectroscopy in the rat G. Morren, S. Van Huffel, I. Helon, G. Naulaers, Effects of non-nutritive sucking on heart rate, respiration and oxygenation: a model-based H. Daniëls, H. Devlieger and P. Casaer signal processing approach F.H. Agani, P. Pichiule, J. Carlos Chavez and Inhibitors of mitochondrial complex I attenuate the accumulation of hypoxia-inducible factor-1 during hypoxia in Hep3B cells J.C. LaManna F. Wenzel, M. Dittrich, J. Hescheler and J. Grote 111 Hypoxia influences generation and propagation of electrical activity in embryonic cardiomyocyte clusters N. Zarchin, S. Meilin, J. Rifkind and A. Mayevsky Effect of aging on brain energy-metabolism T. Kusaka, K. Isobe, K. Nagano, K. Okubo, S. Yasuda, 121 Quantification of cerebral oxygenation by full-spectrum near-infrared spectroscopy using M. Kondo, S. Itoh, K. Hirao and S. Onishi Measurement of cerebral oxygenation in neonates after vaginal delivery and cesarean K. Isobe, T. Kusaka, Y. Fujikawa, K. Okubo, K. Nagano, S. Yasuda, M. Kondo, S. Itoh, K. Hirao section using full-spectrum near infrared spectroscopy and S. Onishi Effect of catecholamines on activity of Na+, K+-ATPase in neonatal piglet brain during T. Zaitseva, J. Shen, G. Schears, J. Creed, D.F. Wilson 139

Contents of volume

Contents of volume		
S.A. Vinogradov, M.A. Fernandez-Seara, B.W. Dugan and D.F. Wilson	147	A method for measuring oxygen distributions in tissue using frequency domain phosphorometry
D.F. Wilson, S.A. Vinogradov, B.W. Dugan, D. Biruski. L. Waldron and S.A. Evans	, 153	Measurement of tumor oxygenation using new frequency domain phosphorometers
R.J. Legtenberg, R.J.F. Houston, B. Oeseburg and P. Smits	161	Physiological insulin concentrations protect against ischemia-induced loss of cardiac function in rats
A.S. Golub and R.N. Pittman	169	Recovery of radial Po_2 profiles from phosphorescence quenching measurements in microvessels
B.W. Pogue, J.A. O'Hara, I.A. Goodwin, C.J. Wilmot, G.P. Fournier, A.R. Akay and H. Swartz	177	Tumor Po_2 changes during photodynamic therapy depend upon photosensitizer type and time after injection
W.K.R. Barnikol, O. Burkhard, H. Poetzschke, U. Domack, S. Dinkelmann, S. Guth, B. Fiedler and B. Manz	185	New artificial oxygen carriers made of pegulated polymerised pyridoxylated porcine haemoglobin ($\rm P_4Hb)$
B. van den Blink, A.J. van der Kleij, H.H. Versteeg and M.P. Peppelenbosch	193	Immunomodulatory effect of oxygen and pressure
F. Torella, R. Cowley, M.S. Thorniley and C.N. McCollum	199	Monitoring blood loss with near infrared spectroscopy
G. Guerriero, A. Di Finizio and G. Ciarcia	205	Stress-induced changes of plasma antioxidants in aquacultured sea bass, $Dicentrarchus$ $labrax$
H. Wu and D.F. Bruley	213	Chelator, metal ion and buffer studies for protein C separation
C.B. Wolff, P. Barry and D.J. Collier	221	$\label{lem:cardiovascular} \begin{tabular}{ll} Cardiovascular and respiratory adjustments at altitude sustain cerebral oxygen delivery — Severinghaus revisited \\ \end{tabular}$
H.J. Kwon, H.I. Balcer and K.A. Kang	231	Sensing performance of protein C immuno-biosensor for biological samples and sensor minimization
J. Sonn, E. Granot, R. Etziony and A. Mayevsky	239	Effect of hypothermia on brain multi-parametric activities in normoxic and partially ischemic rats
	I	Instructions to Authors
		Vol. 132A, No. 2
Review article		
A. Agis-Torres, M.E. López-Oliva, M.T. Unzaga and E. Muñoz-Martínez	247	Body growth and substrate partitioning for fat and protein gain in weaned BALB/c mice treated with growth hormone
General papers		
M.J. Packard and L.D. Lohmiller	257	Mineral status of embryos of domestic fowl following exposure in vivo to the carbonic anhydrase inhibitor acetazolamide
M.P. Halm, M.P. Chichery and R. Chichery	267	The role of cholinergic networks of the anterior basal and inferior frontal lobes in the predatory behaviour of Sepia officinalis
B.J. Wicks and D.J. Randall	275	The effect of sub-lethal ammonia exposure on fed and unfed rainbow trout: the role of glutamine in regulation of ammonia
U. Shanas, D. Afik, M. Scantlebury and A. Haim	287	The effects of season and dietary salt content on body temperature daily rhythms of common spiny mice from different micro-habitats
E.N. Maldonado, E.B. Casanave and M.I. Aveldaño	297	Major plasma lipids and fatty acids in four HDL mammals
M.F. Gouillou-Coustans, V. Fournier, R. Métailler, C. Vachot, E. Desbruyères, C. Huelvan, J. Moriceau, H. Le Delliou and S.J. Kaushik	305	Dietary arginine degradation is a major pathway in ureagenesis in juvenile turbot (Psetta maxima)
MA. Lea, F. Bonadonna, M.A. Hindell, C. Guinet and S.D. Goldsworthy	321	Drinking behaviour and water turnover rates of Antarctic fur seal pups: implications for the estimation of milk intake by isotopic dilution

M. Kihara and T. Sakata	333	Production of short-chain fatty acids and gas from various oligosaccharides by gut microbes of carp (Cyprinus carpio L.) in micro-scale batch culture
C.L. Rowe	341	Differences in maintenance energy expenditure by two estuarine shrimp (<i>Palaemonetes pugio</i> and <i>P. vulgaris</i>) that may permit partitioning of habitats by salinity
N. Saha, Z.Y. Kharbuli, A. Bhattacharjee, C. Goswami and D. Häussinger	353	Effect of alkalinity (pH 10) on ureogenesis in the air-breathing walking catfish, Clarias batrachus
J.M. Wilson, J.D. Morgan, A.W. Vogl and D.J. Randall	365	Branchial mitochondria-rich cells in the dogfish Squalus acanthias
B.K. Tiwary, R. Kirubagaran and A.K. Ray	375	Gonadotropin releasing hormone (GnRH) neurones of triploid catfish, <i>Heteropneustes fossilis</i> (Bloch): an immunocytochemical study
D.X. Hammer, D. Davé, T.E. Milner, B. Choi, H.G. Rylander III and A.J. Welch	381	Investigation of the transduction mechanism of infrared detection in <i>Melanophila acuminata</i> : photo-thermal-mechanical hypothesis
B. Gündüz	393	Daily rhythm in serum melatonin and leptin levels in the Syrian hamster (Mesocricetus auratus)
P. Soppela and M. Nieminen	403	Effect of moderate wintertime undernutrition on fatty acid composition of adipose tissues of reindeer (Rangifer tarandus tarandus L.)
J.P. Boyle and T.P. Yoshino	411	Monoamines in the albumen gland, plasma, and central nervous system of the snail <i>Biomphalaria glabrata</i> during egg-laying
R.W. Rosebrough, S.M. Poch, B.A. Russell and M.P. Richards	423	Dietary protein regulates in vitro lipogenesis and lipogenic gene expression in broilers
J.R. Treberg, J.M. Lewis and W.R. Driedzic	433	Comparison of liver enzymes in osmerid fishes: key differences between a glycerol accumulating species, rainbow smelt (Osmerus mordax), and a species that does not accumulate glycerol, capelin (Mallotus villosus)
V. Hayssen, J.M. Harper and R. DeFina	439	Fecal corticosteroids in agouti and non-agouti deer mice (Peromyscus maniculatus)
D. Pellegrino, E. Sprovieri, R. Mazza, D.J. Randall and B. Tota	447	Nitric oxide-cGMP-mediated vasoconstriction and effects of acetylcholine in the branchial circulation of the eel
A. Taylor, B. Ross, S. McCauley, J.H. Brown and F. Huntingford	459	Inter- and intra-individual variation in resting oxygen consumption in post-larvae of the giant freshwater prawn, <i>Macrobrachium rosenbergii</i> (De Man)
M.L. Figueiredo-Garutti, I. Navarro, E. Capilla, R.H.S. Souza, G. Moraes, J. Gutiérrez and M.L.M. Vicentini-Paulino	467	Metabolic changes in Brycon cephalus (Teleostei, Characidae) during post-feeding and fasting
R.D. Morales and M.S. Hedrick	477	Temperature and pH/CO ₂ modulate respiratory activity in the isolated brainstem of the bullfrog (Rana catesbeiana)
A. Villegas, J.M. Sánchez, E. Costillo and C. Corbacho	489	Blood chemistry and haematocrit of the black vulture (Aegypius monachus)
A. Siah, J. Pellerin, A. Benosman, JP. Gagné and JC. Amiard	499	Seasonal gonad progesterone pattern in the soft-shell clam Mya arenaria
J. Raila, A. Schuhmacher, J. Gropp and F.J. Schweigert	513	Selective absorption of carotenoids in the common green iguana (Iguana iguana)
G. González-Morán, J. García-Izquierdo and I. Camacho-Arroyo	519	Progesterone receptor isoforms in ovary of newly-hatched chick after gonadotropin treatment during embryonic development
	I	Instructions to Authors
		Vol. 132A, No. 3
General papers		
Z. Tang, M. Iqbal, D. Cawthon and W.G. Bottje	527	Heart and breast muscle mitochondrial dysfunction in pulmonary hypertension syndrome in broilers (Gallus domesticus)
I.M. Soares-da-Silva, J. Ribeiro, C. Valongo, R. Pinto, M. Vilanova, R. Bleher and J. Machado	541	Cytometric, morphologic and enzymatic characterisation of haemocytes in <i>Anodonta cygnea</i>

Contents of volume

J. Ivanović, S. Dordević, L. Ilijin, M. Janković-Tomanić and V. Nenadović	555	Metabolic response of cerambycid beetle (Morimus funereus) larvae to starvation and food quality
FA. Weltzien, G.L. Taranger, Ø. Karlsen and B. Norberg	567	Spermatogenesis and related plasma androgen levels in Atlantic halibut (${\it Hippoglossus hippoglossus L.}$)
Y. Dauphin	577	Comparison of the soluble matrices of the calcitic prismatic layer of <i>Pinna nobilis</i> (Mollusca, Bivalvia, Pteriomorpha)
E.J. Cimino, L. Owens, E. Bromage and T.A. Anderson	591	A newly developed ELISA showing the effect of environmental stress on levels of hsp86 in <i>Cherax quadricarinatus</i> and <i>Penaeus monodon</i>
M.Z. Fan, O. Adeola, E.K. Asem and D. King	599	Postnatal ontogeny of kinetics of porcine jejunal brush border membrane-bound alkaline phosphatase, aminopeptidase N and sucrase activities
N. Shirai, H. Suzuki, S. Tokairin, H. Ehara and S. Wada	609	Dietary and seasonal effects on the dorsal meat lipid composition of Japanese (Silurus asotus) and Thai catfish (Clarias macrocephalus and hybrid Clarias macrocephalus and Clarias galipinus
S. Tachibana, K. Sato, T. Takahashi and Y. Akiba	621	Octanoate inhibits very low-density lipoprotein secretion in primary cultures of chicken hepatocytes
A.S. Srivastava, T. Kurokawa and T. Suzuki	629	mRNA expression of pancreatic enzyme precursors and estimation of protein digestibility in first feeding larvae of the Japanese flounder, <i>Paralichthys olivaceus</i>
S. Angelo, A.M. Rojas, H. Ramírez and R. Devés	637	Epithelial cells isolated from chicken jejunum: an experimental model for the study of the functional properties of amino acid transport system $b^{0,+}$
M.D. Fast, D.E. Sims, J.F. Burka, A. Mustafa and N.W. Ross	645	Skin morphology and humoral non-specific defence parameters of mucus and plasma in rainbow trout, coho and Atlantic salmon
Book review T.W. Moon	659	The Laboratory Fish
	I	Instructions to authors

Vol. 132A, No. 4

Includes Symposia from the meeting of the Society of Experimental Biologists, Canterbury, April, 2001.

First to Last Beat; Guest Editors, Michael Axelsson and Tony Farrell

Taking the Heat; Guest Editors, Tobias Wang and Tony Farrell

First to Last Beat Symposium

W. Burggren and D.A. Crossley II	661	Comparative cardiovascular development: improving the conceptual framework
H. Tazawa, R. Akiyama and K. Moriya	675	Development of cardiac rhythms in birds
G.F. Tibbits, L. Xu and F. Sedarat	691	Ontogeny of excitation-contraction coupling in the mammalian heart
E.G. Lakatta and S.J. Sollott	699	Perspectives on mammalian cardiovascular aging: humans to molecules
A.P. Farrell	723	Coronary arteriosclerosis in salmon: growing old or growing fast?
Taking the Heat Symposium		
T. Wang and T. Farrell	737	Introduction
H.O. Pörtner	739	Climate variations and the physiological basis of temperature dependent biogeography: systemic to molecular hierarchy of thermal tolerance in animals
T.E. Gillis and G.F. Tibbits	763	Beating the cold: the functional evolution of troponin C in teleost fish
S. Egginton	773	Temperature and angiogenesis: the possible role of mechanical factors in capillary growth
J.F. Steffensen	789	Metabolic cold adaptation of polar fish based on measurements of aerobic oxygen consumption: fact or artefact? Artefact!

A.P. Farrell	797	Cardiorespiratory performance in salmonids during exercise at high temperature: insights into cardiovascular design limitations in fishes
H.A. Shiels, M. Vornanen and A.P. Farrell	811	The force-frequency relationship in fish hearts—a review
M. Vornanen, H.A. Shiels and A.P. Farrell	827	Plasticity of excitation-contraction coupling in fish cardiac myocytes
W. Klein, D.V. Andrade, T. Wang and E.W. Taylor	847	Effects of temperature and hypercapnia on ventilation and breathing pattern in the lizard Uromastyx aegyptius microlepis
Review		
T.V. Sewards and M.A. Sewards	861	Innate visual object recognition in vertebrates: some proposed pathways and mechanisms
General papers		
R.A. Heimeier, B.J. Davis and J.A. Donald	893	The effect of water deprivation on the expression of atrial natriuretic peptide and its receptors in the spinifex hopping mouse, <i>Notomys alexis</i>
G.C. Packard and M.J. Packard	905	Wetness of the nest environment influences cardiac development in pre- and post-natal snapping turtles (Chelydra serpentina)
XF. Liang, H.Y. Ogata and H. Oku	913	Effect of dietary fatty acids on lipoprotein lipase gene expression in the liver and visceral adipose tissue of fed and starved red sea bream Pagrus major
	1	Contents of Volume 132
	VI	Subject Index
	X	Author Index
	XII	Instructions to Authors